MANAGING MEDIA OBJECTS IN A DATABASE

We claim:

1.   A method of organizing media objects in a database, comprising:

capturing a media object;

detecting attributes of the media object indicated in metadata for the media object;

identifying media objects stored in the database that are related to the media object;

inferring organization information for the media object based upon information obtained from each of the stored media objects that are related to the media object; and

organizing the media object in the database based upon the inference.

2.   The method according to claim 1, wherein the detecting step comprises:

detecting attributes of the media object generated when the media object was captured.

3.   The method according to claim 1, further comprising:

assigning at least one attribute to the metadata for the media object prior to storing the media object.

4.   The method according to claim 1, further comprising:

assigning at least one attribute to the metadata for the media object based upon the inference.

5.   The method according to claim 1, further comprising:

3797.00027

detecting common features of the stored media objects;

identifying the stored media objects that have common features; and

eliminating the stored media objects that are not identified prior to inferring the organizing information.

6.   The method according to claim 5, further comprising:

adding information to the attributes of the metadata of the media object based upon the common features of the stored media objects.

7.   The method according to claim 6, further comprising:

adding information to the metadata of the media object indicating that the organization information for the media object was determined based upon an inference.

8.   The method according to claim 1, further comprising:

adding information to the metadata of the media object indicating that the organization information for the media object was determined based upon an inference.

9.   A method of organizing media objects in a database, comprising:

capturing a media object;

determining attributes of the media object indicated in metadata for the media object;

determining a date on which the media object was captured, wherein the date comprises one of the attributes of the media object;

comparing the date with threshold date information;

identifying media objects stored in the database that are related to the media object based upon the comparison;

inferring organization information for the media object based upon information, obtained from each of the stored media objects related to the media object, and

organizing the media object in the database based upon the inference.

10. A method of organizing media objects in a database, comprising:

capturing a media object;

determining attributes of the media object indicated in the metadata for the media object;

determining a date on which the media object was captured, wherein the date comprises one of the attributes of the media object;

comparing the date on which the media object was captured with entries in a date book;

inferring organization information for the media object based upon the comparison; and

organizing the media object in the database based upon the inference.

11. The method according to claim 9, wherein the comparing step comprises:

comparing the date on which the media object was captured with entries in a global date book.

12. A method of organizing media objects in a database, comprising:

29

capturing a media object;

detecting attributes of the media object indicated in metadata for the media object;

performing an inexact search of the database based upon at least one of the attributes of the media object to identify media objects stored in the database that are related to the media object;

inferring organization information for the media object based upon information obtained from each of the stored media objects that are related to the media object; and

organizing the media object in the database based upon the inference.

13.   The method according to claim 12, wherein the inexact logic search step comprises:

performing an inexact search of the database based upon a date on which the media object was captured, wherein the date comprises one of the attributes of the media object.

14.   The method according to claim 12, wherein the inexact logic search step comprises:

performing an inexact search of the database based upon a location at which the media object was captured, wherein the location comprises one of the attributes of the media object.

15.   A method of organizing media objects in a database, comprising:

capturing a media object;

comparing the media object with media objects that are stored in the database;

3797.00027

identifying the stored media objects in the database that include features in common with the media object;

inferring organization information for the media object based upon information, obtained from each of the media objects including features in common with the media object, representing organization in the database; and

organizing the media object in the database based upon the inference.

16. A method of organizing media objects in a database, comprising:

capturing a media object;

identifying a feature of the media object;

comparing the feature of the media object with stored media objects that are stored in the database;

identifying the stored media objects having the feature;

inferring organization information for the media object based upon information obtained from each of the stored media objects having the feature found in the media object; and

organizing the media object in the database based upon the inference.

17. A method of organizing media objects in a database, comprising:

capturing a media object;

identifying a feature of the media object;

performing an inexact search to detect stored media objects that are stored in the database having the feature identified in the media object;

identifying the media objects having the feature identified in the media object;

inferring organization information for the media object based upon in formation obtained from each of the stored media objects having the feature identified in the media object; and

organizing the media object in the database based upon the inference.

18.   A computer-readable medium having computer-executable instructions for performing the steps of:

capturing a media object;

detecting attributes of the media object indicated in metadata for the media object;

identifying media objects stored in the database that are related to the media object;

inferring organization information for the media object based upon information obtained from each of the stored media objects that are related to the media object; and

organizing the media object in the database based upon the inference.

19.   The computer-readable medium according to claim 18, wherein computer-executable instructions for performing the determining step comprises:

detecting attributes of the media object generated when the media object was captured.

20.   The computer-readable medium according to claim 18, having further computer-executable instructions for performing the steps of:

3797.00027

assigning at least one attribute to the metadata for the media object prior to storing the media object.

21.   The computer-readable medium according to claim 18, having further computer-executable instructions for performing the steps of:

assigning at least one attribute to the metadata for the media object based upon the inference.

22.   The computer-readable medium according to claim 18, having further computer-executable instructions for performing the steps of:

detecting common features of the stored media objects;

identifying the stored media objects that have common features; and

eliminating the stored media objects that are not identified prior to inferring the organizing information.

23.   The computer-readable medium according to claim 22, having further computer-executable instructions for performing the steps of:

adding information to the attributes of the metadata of the media object based upon the common features of the stored media objects.

24.   The computer-readable medium according to claim 23, having further computer-executable instructions for performing the steps of:

adding information to the metadata of the media object indicating that the organization information for the media object was determined based upon an inference.

25.   The computer-readable medium according to claim 18, having further computer-executable instructions for performing the steps of:

adding information to the metadata of the media object indicating that the organization information for the media object was determined based upon an inference.

26.   A computer-readable medium having computer-executable instructions for performing the steps of:

capturing a media object;

determining attributes of the media object indicated in metadata for the media object;

determining the date on which the media object was captured, wherein the date comprises one of the attributes of the media object;

comparing the date with threshold date information;

identifying stored media objects stored in the database that are related to the media object based upon the comparison;

inferring organization information for the media object based upon information obtained from each of the stored media objects related to the media object; and

organizing the media object in the database based upon the inference.

27.   A computer-readable medium having computer-executable instructions for performing the steps of:

capturing a media object;

3797.00027

determining attributes of the media object indicated in the metadata for the media object;

determining the date on which the media object was capture, wherein the date comprises one of the attributes of the media object;

comparing the date on which the media object was captured with entries in a date book;

inferring organization information for the media object based upon the comparison;

and organizing the media object in the database based upon the inference.

28. The computer-readable medium according to claim 27, wherein the computer-executable instructions for performing the comparing step comprises:

comparing the date on which the media object was captured with entries in a global date book.

29. A computer-readable medium having computer-executable instructions for performing the steps of:

capturing a media object;

detecting attributes of the media object indicated in metadata for the media object;

performing an inexact search of the database based upon at least one of the attributes of the media object to identify stored media objects stored in the database that are related to the media object;

inferring organization information for the media object based upon information obtained from each of the stored media objects that are related to the media object; and

3797.00027

organizing the media object in the database based upon the inference.

30.   The computer-readable medium according to claim 29, wherein the computer-executable instructions for performing the inexact logic search step comprises:

performing an inexact search of the database based upon a date on which the media object was captured, wherein the date comprises one of the attributes of the media object.

31.   The computer-readable medium according to claim 29, wherein the computer-executable instructions for performing the inexact logic search step comprises:

performing an inexact search of the database based upon a location at which the media object was captured, wherein the location comprises one of the attributes of the media object.

32.   A computer-readable medium having computer-executable instructions for performing the steps of:

capturing a media object;

comparing the media object with stored media objects that are stored in the database;

identifying the stored media objects in the database that include features in common with the media object;

inferring organization information for the media object based upon information obtained from each of the media objects including features in common with the media object; and

organizing the media object in the database based upon the inference.

33.   A computer-readable medium having computer-executable instructions for performing the steps of:

36   3797.00027

capturing a media object;

identifying a feature of the media object;

comparing the feature of the media object with stored media objects that are stored in the database;

identifying the stored media objects having the feature found in the media object;

inferring organization information for the media object based upon information obtained from each of the stored media objects having the feature found in the media object; and

organizing the media object in the database based upon the inference.

34.   A computer-readable medium having computer-executable instructions for performing the steps of:

capturing a media object;

identifying a feature of the media object;

performing an inexact search to detect stored media objects that are stored in the database having the feature identified in the media object;

identifying the stored media objects having the feature identified in the media object;

inferring organization information for the media object based upon information obtained from each of the stored media objects having the feature identified in the media object; and

organizing the media object in the database based upon the inference.

35. A method of organizing media objects in a database, comprising:

detecting a capture time for each of the media objects to be organized;

sorting the media objects in based upon the capture time to generate a sorted list;

comparing the capture time of each of the media objects with a reference value; and

grouping the media objects in the database based upon the comparison.

36. The method according to claim 35, wherein the comparing step comprises:

determining whether the capture time of the each of the media objects is within a predetermined time period from the reference value; and

wherein the grouping step comprises grouping at least one of the media objects into a collection when the capture time of the at least one of the media objects the media objects is within the predetermined time period from the reference value.

37. The method according to claim 36, further comprising:

selecting a representative media object from the at least one of the media objects grouped in the collection for use as a user interface.

38. The method according to claim 37, further comprising:

repeating the comparing step, the grouping step and the selecting step for each of the media objects in the sorted list.

39. The method according to claim 35, further comprising:

3797.00027

setting a reference value to a predetermined value;

determining whether the capture time of a first one of the media objects in the sorted list is within a predetermined time period from the reference value;

grouping the first one of the media objects into a collection when the capture time of the first one of the media objects is within the predetermined time period from the reference value;

updating the reference value to the capture time of the first one of the media objects in the sorted list to generate an updated reference value; and

repeating the determining step, the grouping step and the updating step for each of the media objects in the sorted list.

40.   The method according to claim 39, further comprising:

creating a new collection when the capture time of any one of the media objects from the sorted list is not within the predetermined time period from the updated reference value.

41.   The method according to claim 40, further comprising:

selecting a representative media object from the collection and from each new collection for use as a user interface.

42.   A method of clustering media objects comprising:

capturing at least two media objects;

creating a model and an associated collection for each of said at least two media objects;

computing distances between said models;

3797.00027

merging at least two of said models;

merging said collections associated with the said at least two models;

repeating the steps of computing distances, merging models, and merging collections until a desired number of collections have been obtained..

43.   The method of claim 42 wherein said model for each of said at least two media objects is a model of physical distance.

44.   The method of claim 42 wherein said model for each of said at least two media objects is a model of time.

45.   The method of claim 42 wherein said model for each of said at least two media objects is a color histogram and said distances are computed via a histogram distance function.

46.   A method of clustering media objects comprising:

capturing at least two media objects;

extracting a creation time for each of said media objects;

determining a time difference between said at least two creation times; and

organizing said media objects based on said determined time difference.